Appendix C Avoidance, Minimization, and/or Mitigation Summary

In order to be sure that all of the environmental measures identified in this document are executed at the appropriate times, the following mitigation program (as articulated on the proposed Environmental Commitments Record [ECR] that follows) would be implemented. During project design, avoidance, minimization, and /or mitigation measures will be incorporated into the project's final plans, specifications, and cost estimates, as appropriate. All permits will be obtained prior to implementation of the project. During construction, environmental and construction/engineering staff will ensure that the commitments contained in this ECR are fulfilled. Following construction and appropriate phases of project delivery, long-term mitigation maintenance and monitoring will take place, as applicable. As the following ECR is a draft, some fields have not been completed, and will be filled out as each of the measures is implemented. A prefix of "PF-" denotes a project feature, or a standardized project measure that is employed on most Caltrans projects and that was not developed in response to any specific environmental impact resulting from the proposed project. Note that some measures may apply to more than one resource area. Duplicative or redundant measures have not been included in this ECR. An asterisk (*) denotes mitigation for a significant impact under CEQA.

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Task and Brief Description	Responsible Branch, Staff	Timing / Phase	NSSP Req.	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
					Initials	Date		Initials	Date
HUMAN ENVIRONMENT									
Land Use									
Project Features									
PF-LU-1 **Restoration of Land Used Temporarily.** Before the onset of construction use, the construction contractor shall generate time-stamped photo documentation of the pre-construction conditions of all temporary staging areas. All construction access, mobilization, material laydown, and staging areas would be returned to a condition equal to the pre-construction staging condition.	Caltrans Resident Engineer and Project Engineer	Construction	No						
PF-LU-2 **Compensation for Publicly Owned Parks Under the California Park Preservation Act.** Per Public Resources Code Division 5, Chapter 2.5, Section 5401 of the California Park Preservation Act, the California Department of Transportation (Caltrans) would provide compensation or land, or both, for all permanent acquisitions of property from publicly owned parks, consistent with the requirements of the California Park Preservation Act of 1971. The California Park Preservation Act requires that the compensation or land, or both, for the taking of the parkland and facilities be equal to one of the following: • The cost of acquiring substitute parkland of comparable characteristics, substantially equal size, and condition; or • Substitute parkland of comparable characteristics, substantially equal size, and condition; or • Any combination of substitute parkland and compensation in an amount sufficient to provide substitute parkland of comparable characteristics, substantially equal size, and condition. During the right-of-way acquisition process, Caltrans would consult with the public agency with jurisdiction over any publicly owned park from which Caltrans requires permanent acquisition of property regarding the specific conditions of acquisition and compensation for, or replacement or enhancement of, other park property for the land that would be acquired.	Caltrans Right-of-Way and Project Engineer	During PSE	No						
Avoidance, Minimization, and/or Mitigation Measures									
No measures are required.									
Community Impacts									
Project Features									
See Land Use (PF-LU-1) and Traffic and Transportation/Pedestrian and Bicycle Facilities (PF-T-1), (PF-UES-2)									
Avoidance, Minimization, and/or Mitigation Measures									
No measures are required.									

Task and Brief Description	Responsible Branch, Staff	Timing / Phase	NSSP Req.	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
					Initials	Date		Initials	Date
Utilities and Emergency Services									
Project Features									
PF-UES-1 During final design, utility relocation plans for those utilities that will need to be relocated, removed, or protected-in-place will be prepared in consultation with the affected utility relocation providers/owners. If relocation is necessary, the final design will focus on relocating utilities within the State right-of-way or other existing public rights-of-way and/or easements. If relocation outside of existing rights-of-way or additional public rights-of-way and/or easements required for the project are necessary, the final design will focus on relocating those facilities to minimize environmental impacts as a result of project construction and ongoing maintenance and repair activities. The utility relocation plans will be included in the project specifications. Prior to and during construction, the construction contractor will implement the components of the utility relocation plans provided in the project specifications. Prior to utility relocation activities, the Resident Engineer will coordinate with affected utility providers regarding potential utility relocations and inform affected utility users in advance of the date and timing of potential service disruptions.	Caltrans Project Engineer	During final design Prior to and during construction During PSE and prior to utility relocation activities	No						
PF-UES-2 All temporary closures and detour plans would be coordinated with law enforcement, fire protection, and emergency medical service providers to minimize temporary delays in emergency response times, including the identification of alternative routes for emergency vehicles and routes across the construction areas that are developed in coordination with the affected agencies.	Caltrans Resident Engineer and Project Engineer	Prior to and during construction	No						
Avoidance, Minimization, and/or Mitigation Measures									
No measures are required.									
Traffic and Transportation/Pedestrian and Bicycle Facilities									
Project Features									
PF-T-1 A Final Transportation Management Plan (TMP) will be developed in detail during final design and will be implemented by the construction contractor during project construction to address short-term traffic circulation and access effects during project construction. Specifically, during final design, a qualified traffic engineer will prepare the TMP, which will include, but not be limited to, the elements described below to reduce traveler delays and enhance traveler safety during project construction. The TMP will be approved by the California Department of Transportation (Caltrans) District 12 during final design and will be incorporated into the plans, specifications, and estimates for implementation by the construction contractor. The purpose of the TMP is to address the short-term traffic and transportation impacts during construction of	Caltrans Traffic Engineer and Project Engineer	During final design and project construction	No						

Task and Brief Description	Responsible Branch, Staff	Timing / Phase	NSSP Req.	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
					Initials	Date		Initials	Date
the project. The objectives of the TMP consist of the following: • Maintain traffic safety during construction • Effectively maintain an acceptable level of traffic flow throughout the transportation system during construction • Minimize traffic delays and facilitate reduction of the overall duration of construction activities • Minimize detours and impacts to pedestrians and bicyclists • Foster public awareness of the project and related transportation and traffic impacts • Achieve public acceptance of construction of the project and the TMP measures The TMP will contain, but not be limited to, the following elements intended to reduce traveler delay and enhance traveler safety, including a public information/awareness campaign, traveler information strategies, incident management, construction strategies, demand management, and alternate route strategies. These elements will be refined during final design and incorporated into the TMP for implementation by the construction contractor during project construction.									
Avoidance, Minimization, and/or Mitigation Measures									
No measures are required.									
Visual/Aesthetics									
Project Features									
PF-VIS-1 **Glare Hoods.** Safety lighting fixtures installed as part of the project will utilize non-glare hoods designed only to illuminate the entrance and exit of San Juan Fire Station.	Caltrans Project Engineer	During PSE and project construction	No						
PF-VIS-2 **Landscaping/Plantings.** Replacement planting will be included in final design to compensate for the loss of existing vegetation, including trees, removed during construction. Vegetation removed for roadway widening will be replaced with native plants similar to existing plant communities.	Caltrans Project Engineer and Landscape Architect	Final design, post construction	No						
Avoidance, Minimization, and/or Mitigation Measures									
VIS-1* **MGS Treatments.** In order to maintain the visual character and quality of the project area, new and replaced Midwest Guardrail System (MGS) will be treated with an organic stain in order to remove the new, shiny galvanized metal appearance. This will result in an earth-tone color applied to the MGS.	Caltrans Project Engineer and Landscape Architect	During final design and construction	Yes						

Task and Brief Description	Responsible Branch, Staff	Timing / Phase	NSSP Req.	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
					Initials	Date		Initials	Date
Cultural Resources									
Project Features									
PF-CUL-1 If cultural materials are discovered during site preparation, grading, or excavation, the construction contractor will divert all earthmoving activity within and around the immediate discovery area until a qualified archaeologist can assess the nature and significance of the find. At that time, coordination will take place with the California Department of Transportation (Caltrans) District 12 Environmental Branch Chief or the District 12 Native American Coordinator to determine the appropriate course of action.	Caltrans Project Engineer, Archaeologist, and Resident Engineer	During construction and post construction (if necessary)	No						
PF-CUL-2 If human remains are discovered, California Health and Safety Code (H&SC) Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. If the remains are thought by the Coroner to be Native American, the Coroner will notify the Native American Heritage Commission (NAHC), who, pursuant to California Public Resource Code (PRC) Section 5097.98, will then notify the Most Likely Descendant (MLD). At that time, the person who discovered the remains will contact the Caltrans District 12 Environmental Branch Chief or the District 12 Native American Coordinator so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.	Caltrans Project Engineer, Archaeologist, and Resident Engineer	During construction and post construction (if necessary)	No						
Avoidance, Minimization, and/or Mitigation Measures									
CR-1* **Environmentally Sensitive Area Action Plan.** The Environmentally Sensitive Area (ESA) Action Plan will protect both sites by utilizing protective orange plastic fencing known as “snow fencing” in order to keep out construction personnel. A professional California Department of Transportation (Caltrans) Professionally Qualified Staff (PQS) qualified monitor (or similarly qualified archaeological consultant) along with a Native American observer will monitor all ground-disturbing activities in the vicinity of site P-30-1723, which will be established as an Archaeological Monitoring Area (AMA). The archaeological monitor will be responsible for noting ESA fencing integrity and immediately notify the Caltrans project archaeologist if any construction impacts to the ESA fencing should occur. The ESA will remain in force throughout the duration of the project. When construction activities are complete, the Resident Engineer will inform the Caltrans project archaeologist that construction work has been completed. Refer to Table A (Tasks and Responsibilities) of the ESA Action Plan for the full list of tasks included to protect these sites.	Caltrans Qualified Archaeologist, Project Engineer, and Resident Engineer	During PS&E and during construction	No						

Task and Brief Description	Responsible Branch, Staff	Timing / Phase	NSSP Req.	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
					Initials	Date		Initials	Date
PHYSICAL ENVIRONMENT									
Water Quality and Storm Water Runoff									
Project Features									
PF-WQ-1 The project will comply with the provisions of the *National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements for the State of California, Department of Transportation, Order No. 2012-0011-DWQ, NPDES No. CAS00003* and any subsequent permits in effect at the time of construction.	Caltrans Resident Engineer and Project Engineer	During design and construction	No						
PF-WQ-2 The project will comply with the provisions of the *NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit)* Order No. 2009-0009-DWQ, NPDES No. CAS000002 and any subsequent permits in effect at the time of construction.	Caltrans Resident Engineer and Project Engineer	Prior to construction	No						
PF-WQ-3 The project will comply with the Construction General Permit by preparing and implementing a Storm Water Pollution Prevention Plan (SWPPP) to address all construction-related activities, equipment, and materials that have the potential impact water quality for the appropriate Risk Level. The SWPPP will identify the sources of pollutants that may affect the quality of storm water and include BMPs to control the pollutants, such as sediment control, catch basin inlet protection, construction materials management and non-storm water BMPs. All work must conform to the Construction Site BMP requirements specified in the latest edition of the *Storm Water Quality Handbooks: Construction Site Best Management Practices Manual* (May 2017) to control and minimize the impacts of construction and construction related activities, material and pollutants on the watershed. These include, but are not limited to temporary sediment control, temporary soil stabilization, scheduling, waste management, materials handling, and other non-storm water BMPs.	Caltrans Resident Engineer and Project Engineer	Prior to and during construction	No						
PF-WQ-4 Design Pollution Prevention Best Management Practices (BMPs) will be implemented, such as preservation of existing vegetation, slope/ surface protection systems (permanent soil stabilization), concentrated flow conveyance systems such as ditches, berms, dikes and swales, overside drains, flared end sections, and outlet protection/velocity dissipation devices.	Caltrans Project Engineer	Prior to and during construction	No						
PF-WQ-5 Caltrans-approved Treatment BMPs will be implemented consistent with the requirements of the NPDES Permit and Waste Discharge Requirements for the State of California, Department of Transportation, Order No. 2012-0011-DWQ, NPDES No. CAS00003 and any subsequent permits in effect at the time of construction. Treatment BMPs may include biofiltration strips, biofiltration swales, infiltration basins, detention devices, dry weather flow diversion, Gross Solids Removal Devices (GSRDs), media filters, and wet basins.	Caltrans Project Engineer	Prior to and during construction	No						

Task and Brief Description	Responsible Branch, Staff	Timing / Phase	NSSP Req.	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
					Initials	Date		Initials	Date
PF-WQ-6 If dewatering is required, construction site dewatering must comply with the General Waste Discharge Requirements for Groundwater Extraction Discharges to Surface Waters within the San Diego Region (Order No. R9-2015-0013, NPDES No. CAG919003) and any subsequent updates to the permit at the time of construction. This Permit addresses temporary dewatering operations during construction. Dewatering BMPs must be used to control sediment and pollutants, and the discharges must comply with the WDRs issued by the San Diego RWQCB.	Caltrans Resident Engineer and Project Engineer	During construction	No						
Paleontology									
Project Features									
No Project Features are required.									
Avoidance, Minimization, and Mitigation Measures									
PAL-1* Concurrently with the development of final design plans, a Paleontological Mitigation Plan (PMP) shall be developed. The PMP will follow the guidelines in the California Department of Transportation (Caltrans) *Standard Environmental Reference (SER), Environmental Handbook*, Volume 1, Chapter 8 – Paleontology (February 2012 or more current), as well as guidelines from the Society of Vertebrate Paleontology (SVP). The PMP shall include sections describing project activities, the geologic units within the project area and their paleontological sensitivities, the work plan for mitigating project impacts to paleontological resources (e.g. construction monitoring), estimates of monitoring schedules and costs, decision thresholds for monitoring levels and fossil collections, a recommended repository for recovered fossils, any necessary permits, and the appropriate documentation at the end of the monitoring program. Once the PMP has been prepared, the paleontological resource protocols and procedures within it shall be incorporated into the Project Plans, Specifications, and Estimates (PS&E).	Caltrans Archaeologist, Project Engineer/ Office Engineer, and Resident Engineer	During PSE and construction and post construction (if necessary)	No						
Air Quality									
Project Features									
PF-AQ-1 **Fugitive Dust Source Controls.** During clearing, grading, earthmoving, and excavation operations, excessive fugitive dust emissions will be controlled by regular watering or other dust preventive measures using the following procedures, as specified in the South Coast Air Quality Management District (SCAQMD) Rules 402 and 403. • All material excavated or graded will be sufficiently watered to prevent excessive amounts of dust. • Watering will occur at least twice daily with complete coverage, preferably in the late morning and after work is done for the day. • All material transported on site or off site will be either sufficiently watered or securely covered to	Caltrans Resident Engineer and Project Engineer	During PSE and construction	No						

	Task and Brief Description	Responsible Branch, Staff	Timing / Phase	NSSP Req.	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
						Initials	Date		Initials	Date
	prevent excessive amounts of dust. The area disturbed by clearing, grading, earthmoving, or excavation operations will be minimized so as to prevent excessive amounts of dust. These control techniques will be indicated in project specifications. Visible dust beyond the property line emanating from the proposed project will be prevented to the maximum extent feasible.									
PF-AQ-2	**Ozone Precursor Emission Controls**. Project grading plans will show the duration of construction. Ozone precursor emissions from construction equipment vehicles will be controlled by maintaining equipment engines in good condition and in proper tune per manufacturers' specifications.	Caltrans Resident Engineer and Project Engineer	During PSE and construction	No						
PF-AQ-3	**Prevention of Spills onto Public Streets**. All trucks hauling excavated or graded material on site will comply with State Vehicle Code Section 23114, with special attention to Sections 23114(b)(F), (e)(2), and (e)(4), as amended, regarding the prevention of such material spilling onto public streets and roads.	Caltrans Resident Engineer and Project Engineer	During PSE and construction	No						
PF-AQ-4	**Caltrans Standard Specifications for Construction**. The construction contractor will adhere to the California Department of Transportation (Caltrans) Standard Specifications for Construction (Section 14-9.02).	Caltrans Resident Engineer and Project Engineer	During PSE and construction	No						
PF-AQ-5	**Construction Vehicles Prohibition**. All construction vehicles both on- and off-site shall be prohibited from idling in excess of five minutes.	Caltrans Resident Engineer and Project Engineer	During PSE and construction	No						
Avoidance and Minimization Measures										
No mitigation is required.										
Noise										
Project Feature										
PF-N-1	The nighttime noise level from the construction contractor's operations, between the hours of 9:00 p.m. and 6:00 a.m., will not exceed 86 A-weighted decibels (dBA) at a distance of 50 feet. In addition, the construction contractor will equip all internal combustion engines with a manufacturer-recommended muffler and will not operate any internal combustion engine on the job site without the appropriate muffler.	Caltrans Resident Engineer and Project Engineer	During PSE and construction	No						
Avoidance, Minimization, and/or Mitigation Measures										
No measures are required.										

Task and Brief Description		Responsible Branch, Staff	Timing / Phase	NSSP Req.	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
						Initials	Date		Initials	Date
BIOLOGICAL ENVIRONMENT										
Natural Communities										
Project Feature										
No Project Features are required.										
Avoidance, Minimization, and/or Mitigation Measures										
BIO-1	**Delineation of Environmentally Sensitive Areas (ESAs).** Prior to construction, highly visible barriers (e.g., orange construction fencing) will be installed along the boundaries of the project footprint to designate ESAs that are to be preserved. No project activity of any type will be permitted within these ESAs. In addition, heavy equipment, including motor vehicles, will not be allowed to operate within the ESAs. All construction equipment will be operated in a manner so as to prevent accidental damage to ESAs. No structure of any kind, or incidental storage of equipment or supplies, will be allowed within these protected zones. Silt fence barriers will be installed at the ESA boundary to prevent accidental deposition of fill material in areas where vegetation is immediately adjacent to planned grading activities.	Caltrans Project Engineer, Resident Engineer, Generalist, and Biologist	PSE and prior to construction	No						
BIO-2	**Pre-Construction Nesting Bird Surveys.** Vegetation clearing and grubbing shall occur outside bird nesting season (February 1–September 1). If clearing and grubbing is required during nesting season, pre-construction nesting bird surveys will be conducted by a qualified biologist. Should nesting birds be found, an exclusionary buffer will be established by the biologist. This buffer shall be clearly marked in the field by construction personnel under guidance of the biologist, and construction or clearing will not be conducted within this zone until the biologist determines that the young have fledged or the nest is no longer active.	Caltrans Biologist, Resident Engineer	PSE, pre-construction, and during construction	No						
BIO-3	**Invasive Species Control.** Invasive species will be removed from the project work area and controlled during construction. In compliance with Executive Order 13112, a weed abatement program shall be developed for the proposed project prior to construction to minimize the importation of non-native plant material during and after construction. Eradication strategies would be employed should an invasion occur. At a minimum, the weed abatement program will include the following measures: • During construction, the construction contractor shall inspect and clean construction equipment at the beginning of each day and prior to transporting equipment from one project location to another. • During construction, soil and vegetation disturbance will be minimized to the greatest extent feasible. • During construction, the construction contractor shall ensure that all active portions of the construction site are watered a minimum of twice daily, or more often when needed due to dry or	Caltrans Resident Engineer	PSE and during and after construction	Yes						

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					Initials	Date		Initials	Date
windy conditions, to prevent excessive amounts of dust. • During construction, the construction contractor shall ensure that all material stockpiled is sufficiently watered or covered to prevent excessive amounts of dust. • During construction, soil, gravel, and rock will be obtained from weed-free sources. • Only certified weed-free straw, mulch, and/or fiber rolls will be used for erosion control. • After construction, affected areas adjacent to native vegetation will be revegetated with plant species that are native to the vicinity as approved by the District Biologist. If the revegetation area or erosion control area is located within the United States Department of Agriculture (USDA) U.S. Forest Service (USFS) right-of-way, the plant species will be reviewed by the Cleveland National Forest Service biologist. • After construction, all revegetated areas will avoid the use of species listed on the California Invasive Plant Council (Cal-IPC) California Invasive Plant Inventory that have a high or moderate rating. The revegetation effort will also avoid the use of non-native species covered under the Weed Management Strategy of the Cleveland National Forest Land Management Plan, including species designated as Priority 1, 2, or 3 species as well as rapid response species.									
BIO-4 **Restoration/Revegetation of Temporary Impacts.** The California Department of Transportation (Caltrans) will restore/revegetate areas of natural habitat that are temporarily affected by construction activities. The restoration effort will involve a 5-year plant establishment period and will emulate surrounding native vegetation characteristics and/or return to previous conditions as approved by the District Biologist. For state highway construction projects, revegetation plans will be part of the project design following Caltrans landscape architecture guidelines and requirements. Restoration plans will be reviewed and approved by the involved regulatory agencies (e.g., the California Department of Fish and Wildlife [CDFW], the United States Fish and Wildlife Service [USFWS], and the Regional Water Quality Control Board [RWQCB]).	Caltrans Resident Engineer, and Biologist	PSE and post construction	No						

Task and Brief Description		Responsible Branch, Staff	Timing / Phase	NSSP Req.	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
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BIO-5*	**Riparian Woodland Compensatory Mitigation.** Temporary impacts to riparian habitat will be restored with native vegetation after construction of all project components is completed. Compensatory mitigation for permanent impacts will be mitigated by transferring funds to the USFS for a proposed restoration project that would remove Spanish broom (*Spartium junceum*) and other invasive plant species from San Juan Creek within Forest Service lands. This effort would serve to enhance riparian and wetland resource functions within the watershed. In addition, Caltrans will replace permanently impacted riparian habitats off-site at a minimum 1:1 ratio by purchasing mitigation credits from the San Luis Rey Mitigation Bank. The San Luis Rey Mitigation Bank is approved to provide mitigation for permitted projects under United States Army Corps of Engineers (USACE) Section 404 permits, RWQCB Section 401 certifications, and California Fish and Game Code Section 1600 streambed alteration agreements.	Caltrans Project Management, Right of Way	PSE and prior to or after the beginning of construction	No						
BIO-6	**Avoidance of Oak Tree Dripline.** ESA fencing will be installed around the dripline of the retained trees to avoid or minimize unnecessary encroachment and prohibit mechanical activity within the root zone. No construction activities or placement of structures should occur within the root zone of any retained oak trees. Landscaping, trenching, or irrigation systems should not be installed within the root zone of any retained oak trees. Sedimentation and siltation should be controlled to avoid filling around an oak tree's base.	Caltrans Biologist, and Resident Engineer	PSE and prior to construction	No						
BIO-7	**Monitor Retained Oak Trees.** Monitor retained oak trees adjacent to the project during grading and construction activities. Monitoring of retained oak trees should occur at intervals warranted by the site conditions and level of activity. A qualified arborist should conduct all monitoring. All oak tree removals should be verified to check for damage to any retained oak trees growing in close proximity to the removed oak trees.	Caltrans Biologist	PSE and during grading and construction	No						
BIO-8	**Conduct Pruning of Retained Oak Trees According to Approved Standards.** All pruning should be directed by an International Society of Arboriculture (ISA)-certified arborist and performed by ISA-certified tree workers in accordance with the Best Management Practices (BMPs) for Pruning by the ISA Society of Arboriculture and should adhere to the most recent editions of the American National Standards Institute (ANSI) for Tree Care Operations and Pruning A300, Part 1 (see the Oak Tree Inventory Report in Appendix G).	Caltrans Biologist	PSE and during construction	No						

Task and Brief Description		Responsible Branch, Staff	Timing / Phase	NSSP Req.	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
						Initials	Date		Initials	Date
BIO-9	**Oak Tree Replacement.** In compliance with State Senate Concurrent Resolution No. 17, impacts to upland oak trees (excluding California scrub oak [*Quercus berberidifolia*]) with trunk sizes greater than 8 inches diameter at breast height (DBH) but less than 36 inches DBH will be replaced at a minimum mitigation-to-impact ratio of 1:1, as feasible. Heritage oaks (i.e., oaks with trunk sizes greater than 36 inches DBH) will be replaced at a minimum mitigation-to-impact ratio of 3:1, as feasible.	Caltrans Biologist	PSE and post construction	No						
Wetlands and Other Waters										
Project Feature										
No Project Features are required										
Avoidance, Minimization, and/or Mitigation Measures										
WET-1	**Regulatory Permitting.** Prior to initiation of construction, permits shall be obtained for the proposed project through the United States Army Corps of Engineers (USACE) pursuant to Section 404 of the Clean Water Act (CWA), the Regional Water Resources Control Board (RWQCB) pursuant to Section 401 of the CWA, and the California Department of Fish and Wildlife (CDFW) pursuant to Section 1602 of the California Fish and Game Code. The Section 404 permit will be obtained pursuant to the San Juan Creek/Western San Mateo Creek Watershed Special Area Management Plan.	Caltrans Biologist	Prior to initiation of construction permits	No						
Plant Species										
Project Feature										
No Project Features are required										
Avoidance, Minimization, and/or Mitigation Measures										
BIO-10	**Special-Status Plant ESA Fencing.** All special-status plants identified adjacent to the direct impact limits shall be protected behind ESA fencing. For impacts to individual plants, the affected plants will be relocated, as feasible. A qualified biologist will oversee and document all translocation efforts.	Caltrans Biologist	PSE and during construction	No						
Animal Species										
Project Feature										
No Project Features are required										
Avoidance, Minimization, and/or Mitigation Measures										
BIO-11	**Nesting Ringtail Exclusionary Buffers.** Tree trimming or tree removal shall be avoided during the bird nesting season (February 15–August 31), to provide full avoidance of the ringtail denning season. In the event that vegetation clearing is necessary during the ringtail's denning season, a qualified biologist will conduct a pre-construction survey to identify potential locations of dens. Should nesting ringtails be found, an exclusionary buffer will be established by the qualified biologist. This buffer will be clearly marked in the field by construction personnel under the guidance of the qualified biologist, and construction or clearing shall not be conducted within this zone until the qualified biologist determines that the den is no longer active.	Caltrans Biologist	PSE and prior to construction	No						

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BIO-12	**Replace Impacted Night-Roosting Bat Habitat.** If the Cold Springs Canyon culvert is replaced rather than simply repaired, the replacement culvert shall have similar features as the original, suitable for use by night-roosting bats.	Caltrans Biologist	PSE and during construction	No						
BIO-13	**Night Lighting During Construction.** During nighttime work for project construction, night lighting shall be used only in the area actively being worked on and focused on the direct area of work.	Caltrans Resident Engineer	PSE and during nighttime work for project construction	No						
BIO-14	**Access to Roost Features.** Airspace access to and from the roost features of the structure shall not be obstructed except in direct work areas.	Caltrans Biologist, and Resident Engineer	PSE and during construction	No						
BIO-15	**Minimize Tree Removal.** The removal of mature trees and snags should be minimized to the greatest extent practicable.	Caltrans Resident Engineer	PSE and during construction	No						
BIO-16	**Avoidance of Tree Trimming/Removal During Bat Maternity Season.** If trimming or removal of mature trees and snags is necessary for project construction, tree trimming/removal activities will be performed outside of the bat maternity season, which occurs from April 1 through August 31, to avoid direct impacts to non-volant (flightless) young that may roost in trees within the study area, to the extent feasible. This period also coincides with the bird nesting season (typically February 15–August 31).	Caltrans Resident Engineer	PSE and during construction	No						
BIO-17	**Pre-Construction Survey and Monitoring by a Qualified Bat Biologist.** If trimming or removal of trees during the bat maternity season (April 1–August 31) cannot be avoided, a qualified Biologist will monitor tree removal unless nighttime surveys conducted within 1 week of removal indicate no tree-roosting bat activity within the study area.	Caltrans Biologist	PSE and during construction	No						
Threatened and Endangered Species										
Project Feature										
No Project Features are required										
Avoidance, Minimization, and/or Mitigation Measures										
BIO-18	**Avoidance of Arroyo Toad Breeding Habitat.** No construction work shall occur within San Juan Creek and suitable breeding habitat during the Arroyo Toad **(**ARTO) breeding season (generally between March 15 and July 1).	Caltrans Resident Engineer	PSE and during construction	No						
BIO-19	**Arroyo Toad Pre-Construction Surveys.** Pre-construction surveys for ARTO shall be conducted 2 weeks prior to ground-disturbing activities (including placement of heavy equipment) in or near aquatic habitats. The pre-construction surveys will be conducted by a USFWS-approved qualified Biologist (i.e., one with ARTO surveying/handling experience) to determine their presence or absence within the construction footprint. If non-native species are found during the survey effort, they will be removed. The Wildlife Agency approved/ qualified Biologist will walk the impact area to search for any potential breeding areas. To the extent possible, pre-construction surveys will be conducted under	Caltrans Biologist	PSE and prior to construction	No						

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						Initials	Date		Initials	Date
	weather conditions when ARTO are expected to be active. If construction begins under conditions that would not be conducive to ARTO activity, pre-construction surveys may be conducted more than 2 weeks prior. A report documenting the pre-construction survey results and measures that will be required during construction will be provided to Caltrans and the Wildlife Agencies prior to commencing construction or within 2 weeks of completion of field surveys, whichever is earlier. If ARTO are found within the construction footprint, the occupied habitat and an appropriate buffer (as determined by a qualified Biologist) will be avoided to the maximum extent practicable.									
BIO-20	**Arroyo Toad Exclusionary Fencing.** All construction activities shall be limited to the impact boundaries by installing exclusionary fencing (i.e., silt fence or other suitable non-penetrable fencing) along the boundary to prevent construction from encroaching into adjacent areas and to exclude ARTO from the construction site. A USFWS-approved biologist permitted to handle ARTO shall conduct weekly ARTO exclusionary fence inspections to ensure that any breaks in the fencing or erosion control measures are repaired immediately.	Caltrans Biologist	PSE and during construction	Yes						
BIO-21	**Arroyo Toad Biological Monitor.** A USFWS-approved Biologist permitted to handle ARTO shall monitor all construction activities within and adjacent to occupied ARTO habitat. The ARTO monitoring shall occur weekly if construction activities occur outside the breeding season. If work is required near occupied habitat during the breeding season, then monitoring shall occur daily. If ARTO are found, the qualified Biologist may relocate them out of harm's way to reduce injury or mortality from equipment, foot traffic, or ground disturbance. Field notes and weekly memos will be provided to Caltrans detailing monitoring items and fence conditions.	Caltrans Biologist	PSE and during construction	No						
BIO-22	**Worker Environmental Awareness Program.** Prior to construction, a qualified Biologist shall provide a worker environmental awareness program (WEAP) for listed species that may be affected by the project. The program shall be presented to all personnel working on site during construction.	Caltrans Biologist, and Resident Engineer	Prior to and during construction	No						
BIO-23*	**Compensatory Mitigation for Suitable Arroyo Toad Habitat.** Caltrans will continue existing eradication efforts within San Juan Creek for an additional 5-year period. Invasive ARTO predators within San Juan Creek and associated habitats will be removed during the 5-year period, beginning no sooner than 2019.	Caltrans Biologist	PSE and post construction	No						

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BIO-24	**Project Biologist.** A biologist (Project Biologist)[1] approved by the Carlsbad Fish and Wildlife Office (CFWO) will be on site: (a) during all vegetation clearing/grubbing; and (b) weekly during project construction within 500 feet of ARTO habitat to monitor compliance with all conservation measures. Caltrans will submit the biologist's name, contact information, and work schedule on the project to the CFWO at least 15 working days prior to initiating project impacts. The Project Biologist will be provided with a copy of this consultation. The Project Biologist will be available during pre-construction and construction phases to address protection of sensitive biological resources, monitor ongoing work, and maintain communications with construction personnel to facilitate the appropriate and lawful management of issues relating to biological resources. The Project Biologist will report any non-compliance issue to the Resident Engineer and Caltrans Project Biologist such that work can be halted if necessary, and the issue can be discussed with the CFWO to ensure the proper implementation of species and habitat protection measures. The Caltrans Project Biologist will report all non-compliance issues to the CFWO within 1 business day of notification.	Caltrans Biologist	Prior to and during construction							
BIO-25	**Temporary Impact Restoration Plan.** Caltrans will submit a habitat restoration plan for temporary impact areas to the CFWO for review and approval at least 30 days prior to initiating project impacts. The plan will include the following information and conditions: a) All habitat restoration/enhancement sites will be prepared for planting in a way that mimics natural habitat to the maximum extent practicable. All plantings will be installed in a way that mimics natural plant distribution and not in rows; b) Planting palettes (plant species, size, and number/ acre) and seed mixes (plant species and pounds/ acre) will be limited to locally native species (e.g., species found in or near the biological study area for the project). The source location of all plant material and seed will be provided to the CFWO prior to use in restoration activities; c) Container plant survival will be 80 percent of the initial plantings for the first 5 years. At the first and second anniversary of plant installation, all dead plants will be replaced unless their function has been replaced by plants from seed or natural recruitment; d) A final implementation schedule will indicate when all impacts, as well as restoration planting and irrigation, will begin and end;	Caltrans Biologist	Prior to construction							

[1] The Project Biologist will be familiar with the biology and ecology of the ARTO and with the habitats that support this species.

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e) The final restoration plan will include 5 years of success criteria for restoration areas including: percent cover, evidence of natural recruitment of multiple species for all habitat types, 0 percent coverage will be maintained for woody California Invasive Plant Council's (Cal-IPC's) "Invasive Plant Inventory" species (e.g., trees and shrubs), and no more than 10 percent coverage for other exotic/ weed species; f) A minimum 5 years of maintenance and monitoring of restoration areas, unless success criteria are met earlier and all artificial water supplies have been off for at least 2 years; g) A qualitative and quantitative vegetation monitoring plan with a map of proposed sampling locations. Photo points will be used for qualitative monitoring, and stratified-random sampling will be used for all quantitative monitoring; h) Contingency measures in the event of restoration failure; i) Annual mitigation maintenance and monitoring reports will be submitted to the CFWO no later than December 1 of each year; and j) To minimize impacts to ARTO during maintenance of restoration areas, the following measures will be implemented: i. If restoration maintenance work is necessary within or directly adjacent to suitable ARTO breeding habitat during the active season for ARTO (March 1–August 15) while water is flowing or has ponded in the area, the Project Biologist will monitor potential ARTO breeding habitat to determine whether egg clutches, larvae, or juveniles are present. If eggs, larvae, or juvenile ARTO are found, restoration maintenance work will not occur in the area until signs of breeding are no longer evident. ii. Restoration maintenance work during rain events will be avoided to the greatest extend feasible as ARTO may become active during rain events and work may result in sedimentation into breeding habitat. To ensure that restoration work is completed in a timely fashion, work may continue during a light or intermittent rain, if the Project Biologist, using his/her best judgment, determines that increased impacts to ARTO are unlikely. iii. Either ARTO exclusion fencing will be maintained around restoration areas for the duration of restoration maintenance work, or									

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	the following measure will be implemented: All earth-disturbing activities conducted for restoration work (e.g., irrigation repairs and replanting) where there is potential for the presence of aestivating ARTO (i.e., sandy, friable soils) will be monitored by the Project Biologist who will ensure that impacts to ARTO are avoided to the greatest extent feasible by either: (1) overseeing earth-disturbing activities (e.g., excavation of planting basins and irrigation repairs) in potential aestivation areas and ensuring that hand tools are used to a depth of 1 foot such that ARTO are detected and salvaged if present; or (2) conducting pre-construction translocation surveys and directing work away from observed ARTO, or relocating ARTO to suitable habitat away from the immediate work area. **iv.** If ARTO exclusion fencing is removed, transportation of materials for restoration maintenance work within suitable habitat will be conducted on foot, or with lightweight all-terrain vehicles and/or small gators with trailers. If possible, equipment used will have soft tires with minimal tread and a wide wheel base to better distribute weight and reduce soil disturbance. Vehicle speed will not exceed 15 miles per hour.									
BIO-26	**Native Landscaping.** Cut-and-fill slopes within the permanent impact area will be revegetated with native vegetation with similar composition to adjacent habitats. Landscaping for the project will be limited to locally native species. Duff and rare plants may be salvaged from the project impact footprint to aid in revegetating slopes with native habitats. The revegetated areas will have temporary irrigation and will be planted with native container plants and seeds. At least 3 years of plant establishment/maintenance on these slopes will be conducted to control invasive weeds. These areas will be planted as soon as possible following grading to prevent encroachment by weeds.	Caltrans Biologist and Project Engineer	Post construction							
BIO-27	**Arroyo Toad Compensatory Mitigation.** To offset the impacts of the project on ARTO and its habitat, including permanent impacts to 1.23 acres of suitable habitat for the ARTO out of critical habitat and 2.47 acres of designated ARTO critical habitat with physical and biological features, Caltrans will either: (a) establish a non-wasting endowment to which this project would contribute $250,000 to fund long-term management actions for ARTO in San Juan Creek, including predator	Caltrans Project Management	Prior to construction							

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control (the endowment will be available for use no later than March of 20201); or (b) allocate $250,000 to fund at least 5 years of ARTO surveys and invasive species (American bullfrog [Lithobates catesbeiana], red swamp crayfish [Procambarus clarkii], and African clawed frog [Xenopus laevis]) removal within San Juan Creek within Cleveland National Forest and Ronald W. Caspers Wilderness Park.2 Caltrans will submit qualifications and contact information for the individual(s) that will implement the predator control program and work plan to the CFWO for review and approval at least 15 working days prior to initiating project impacts. The plan will include a map of the location where predator control and survey efforts will occur and an implementation schedule that indicates when predator control efforts and surveys will occur. The schedule will document that predator control work will commence prior to or concurrent with project impacts. Annual reports will be provided to the CFWO by March 1 summarizing predator control and survey efforts. This is a continuation of efforts associated with the following Biological Opinions: FWS-OR-1688.6, FWS-OR-10B0217-10FE0452, FWS-OR-11B0223-11FE0362, and FWS-OR-12B0136-13F0306.									
BIO-28 **Arroyo Toad Translocation Monitoring Program.** An ARTO translocation monitoring program will be developed and implemented. The program will be provided to the CFWO for review and approval. The program will include the following requirements: a) Prior to clearing, grubbing, and construction activities, the Project Biologist will monitor ARTO breeding activity in those project areas containing or adjacent to breeding habitat. The biologist will determine when egg clutches or larvae are no longer present in the waterway. When signs of breeding are no longer evident, an exclusionary fence will be installed and clearance surveys initiated. b) Prior to clearing, grubbing, and construction activities, ARTO exclusionary fencing will be installed around the perimeter of all work areas within potential ARTO habitat with the exception of areas where topography is such that the Project Biologist, using his or her best judgment, believes that occupancy by ARTO is unlikely, and installation of ARTO fencing is not practical. In areas without water flows, the ARTO exclusion fence will consist of woven nylon fabric or similar material at least 2 feet high, staked firmly to the ground. In areas where soils are suitable for	Caltrans Biologist	Prior to construction							

[1] The 2017 SR-74 Emergency Culvert Replacement Project would also contribute $100,000 in funding toward the endowment for a total of $350,000 (with a 5 percent return, this is anticipated to provide 17,500 per year in perpetuity).
[2] The 2017 SR-74 Emergency Culvert Replacement Project would also contribute $100,000 in funding for two additional years of ARTO surveys and predator control work (a total of $350,000 for 7 years of work).

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aestivation, the lower 1 foot of material will stretch outward along the ground and be secured with a continuous line of sandbags to prevent burrowing beneath the fence. Doubling this line (i.e., stacking sand or gravel bags two-deep) may reduce maintenance and should be considered in order to improve the integrity of the fencing. In areas where soils are not suitable for aestivation, (i.e., hardpack soils), fencing may be buried to reduce maintenance concerns and improve the integrity of the fencing over time. Mechanized installation of buried portions of the fencing may be considered as it may reduce foot-traffic and disturbance of adjacent habitat. In areas where there is existing or potential inundation, wire mesh held in place with t-posts and secured with sand or gravel bags should be utilized to allow for the passage of water flows without compromising the integrity of the fencing. A small amount of vegetation may be removed to facilitate installation of the fencing, so long as it is conducted without disturbing the soil in areas where soils are suitable for aestivation, and does not impact habitats to be avoided. In areas with challenging topography where ARTO occupancy is deemed unlikely by the Project Biologist, the limits of work will be clearly delineated using other means (e.g., stakes with bright orange flagging). Fence ends will tie into areas with challenging topography in a manner designed to keep toads out of the project footprint. Decisions on the appropriate fencing installation method for a given reach will be made by the Project Biologist. Fencing will be clearly visible to personnel on foot and operating heavy equipment. Caltrans will submit to the CFWO for approval, at least 5 days prior to initiating project impacts (except for impacts resulting from clearing to install ARTO exclusion fencing), the final plans for initial clearing and grubbing of habitat and project construction. These final plans will include photographs that show the fenced limits of impact, the flagged project limits in areas with challenging topography where occupancy was deemed unlikely, and all areas to be impacted or avoided. ARTO exclusionary fencing will be maintained in good repair until the completion of project construction and removed upon project completion. c) Prior to the initiation of construction activities, but after exclusionary fencing has been installed, a minimum of six consecutive night surveys for ARTO will be conducted within the fenced project area by the Project Biologist. Surveys will continue until there have been two consecutive nights without ARTO inside the fence. ARTO will be										

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excluded from the fenced project footprint before large-scale vegetation removal efforts commence; however, some vegetation removal may occur to improve visibility for salvage of ARTO, as long as it is conducted without disturbing the soil and within the fenced project footprint. Surveys will be conducted during the appropriate climatic conditions and during the appropriate time of night to maximize the likelihood of encountering ARTO. If climatic conditions are not appropriate for ARTO movement during the surveys, the biologist may attempt to illicit a response from the ARTO, during nights (i.e., at least 1 hour after sunset) with temperatures above 10 degrees Celsius (50 degrees Fahrenheit), by spraying the project area with water to simulate a rain event. If it is not feasible to spray the entire project area with water, then spraying would occur in the areas of greatest concern under the direction of the Project Biologist. d) Capture methods will follow commonly accepted techniques for amphibian field sampling, including capture by hand and pitfall trapping. All pitfall traps will be covered or removed when clearance surveys are not occurring. ARTO will be handled in an expedient manner with minimal harm. Captured ARTO will not be handled for more than 15 minutes. Any ARTO exhibiting signs of physiological distress will be immediately released in the most proximal and safe suitable habitat. Any ARTO captured will be checked for a Passive Integrated Transponder (PIT) tag with a PIT-tag reader by the Project Biologist. e) If the exclusion fencing is found damaged during weekly monitoring conducted by the Project Biologist during the active season for ARTO (March 1–August 15), thereby allowing ARTO access to the impact area, ARTO exclusion surveys will be repeated by the Project Biologist for a minimum of three consecutive nights prior to any additional construction activities occurring in the area. f) The approved Project Biologist will monitor all groundbreaking activities that occur within areas demarcated with ARTO exclusion fencing to salvage and relocate ARTO and to quantify take of ARTO. g) If construction will occur in ARTO breeding habitat during the active season for ARTO (March 1–August 15) while water is flowing in the creek or has ponded within the action area, the Project Biologist will monitor potential ARTO breeding habitat to determine whether egg clutches, larvae,									

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or juveniles are present in the waterway. If eggs, larvae, or juvenile ARTO are found, the Project Biologist will request that the Resident Engineer halt work in the area until signs of breeding are no longer evident. h) To avoid transferring disease or pathogens between aquatic habitats during surveys and handling of ARTO, the Project Biologist will follow the *Declining Amphibian Population Task Force's Fieldwork Code of Practice* (DAPTF 1998), or newer version when available. i) American bullfrogs (*Lithobates catesbeiana*) and other exotic animal species that prey upon or compete with ARTO for resources will be excluded, destroyed, or otherwise permanently removed from the habitat by the Project Biologist if encountered. j) The Project Biologist will maintain a complete record of all ARTO encountered and relocated in association with the project. The date and time of observation, sex, physical dimensions, PIT-tag code, coordinates/specific location of capture and release, and photographs (when possible) will be recorded and provided to the CFWO, within 30 days of the completion of translocation.									
BIO-29 **Biological Resources Education Program.** An employee education program will be developed and implemented by the Project Biologist. Each employee (including temporary, contractors, and subcontractors) will receive a training/awareness program prior to working on the proposed project. They will be advised of the potential impact to the listed species and the potential penalties for taking such species. At a minimum, the program will include the following topics: occurrence of the listed and sensitive species in the area (including photographs), their general ecology, sensitivity of the species to human activities, legal protection afforded these species, penalties for violations of federal and State laws, reporting requirements, and project features designed to reduce the impacts to these species and promote continued successful occupation of the project area.	Caltrans Biologist	Prior to construction							
BIO-30 **Invasive Species Removal.** During project construction (excluding the plant establishment period, which will be addressed in the restoration plan) all invasive species included on the National Invasive Species Management Plan, the State of California Noxious Weed List, and the California Invasive Plant Council's Invasive Plant Inventory list (Cal-IPC 2006) found growing within the project impact area will be identified and removed at least once per month. Special care will be taken during the transport, use, and disposal of soils containing invasive weed seeds, and all weedy vegetation removed	Caltrans Biologist and Project Engineer	During construction							

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	during construction will be properly disposed of to prevent spread into areas outside of the construction area. All heavy equipment will be washed and cleaned of debris prior to entering a new area to minimize the spread of invasive weeds.									
BIO-31	**Nighttime Construction Lighting.** If nighttime construction is necessary, all project lighting (e.g., staging areas, equipment storage sites, and/or roadway) will be selectively placed and directed onto the roadway or construction site and away from sensitive habitats. Light glare shields will be used to reduce the extent of illumination into sensitive habitats. No nighttime construction or lighting will occur in ARTO breeding habitat during the active season (March 1–August 15).	Caltrans Biologist and Project Engineer	During construction							
BIO-32	**Project Lighting.** Permanent project lighting will be of the lowest illumination necessary for safety and will be directed toward the roadway and away from sensitive habitats. Light glare shields will be used to reduce the extent of illumination into sensitive habitats. Caltrans will review the permanent lighting plans and then submit them to the CFWO for review and approval.	Caltrans Resident Engineer	Prior to construction							
BIO-33	**Water Quality Best Management Practices.** A construction Storm Water Pollution Prevention Plan (SWPPP) and soil erosion and sedimentation plan will be developed to identify best management practices that will be implemented during construction to minimize erosion, prevent sediment and debris from entering drainages, and maintain water quality. Sediment will not be stockpiled in areas where ARTO might burrow into the loose material, or where material could be washed into drainages by rainfall. Erosion and sediment control devices used for the proposed project, including fiber rolls and bonded fiber matrix, will be made from biodegradable materials such as jute, with no plastic mesh, to avoid creating a wildlife entanglement hazard.	Caltrans Biologist and Project Engineer	Prior to and during construction							
BIO-34	**Designated Maintenance, Staging, and Fueling Areas.** All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities will be restricted to designated areas located within previously disturbed upland. They will be located such that runoff from the designated areas will not enter ARTO breeding habitat.	Caltrans Biologist and Project Engineer	Prior to and during construction							
BIO-35	**Fugitive Dust Control.** Impacts from fugitive dust will be minimized through watering and other appropriate measures.	Caltrans Project Engineer	During construction							
BIO-36	**Construction Site Housekeeping.** The project site will be kept as clear of debris as possible. All food-related trash items will be enclosed in sealed containers and regularly removed from the site.	Caltrans Project Engineer	During construction							
BIO-37	**Borrow and Disposal Sites.** If fill must be borrowed from, or disposed of off site, the construction contractor will identify any necessary borrow and disposal sites and provide this information to Caltrans for review. Caltrans will review borrow and disposal site information and	Caltrans Project Engineer	During construction							

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	submit the information to the CFWO. If borrow or disposal activities may affect a listed species or critical habitat, Caltrans will re-initiate Section 7 consultation.									
BIO-38	**Domestic Pets.** Project personnel will be prohibited from bringing domestic pets to construction sites to ensure that domestic pets do not disturb or depredate wildlife in adjacent native habitats.	Caltrans Project Management	During construction							
BIO-39	**Monthly Compliance Reports.** The Project Biologist will submit monthly email reports (including photographs of impact areas) to the Caltrans Project Biologist during clearing of, and construction within, 500 feet of ARTO habitat. The monthly reports will document that authorized impacts were not exceeded and in general compliance with all conditions. The reports will also outline the location of construction activities, the type of construction that occurred, and equipment used. These reports will specify numbers and locations, and sex of listed species (if observed), their observed behavior (especially in relation to construction activities), and remedial measures employed to avoid and minimize impacts to these species. Raw field notes should be available upon request by the CFWO. The Caltrans Project Biologist will review reports and forward them to the CFWO.	Caltrans Biologist	During construction							
BIO-40	**Project Completion Compliance Report.** The Project Biologist will submit a final report to the Caltrans Project Biologist within 120 days of project completion including photographs of impact areas and adjacent habitat, documentation that authorized impacts were not exceeded, and documentation that general compliance with all conservation measures was achieved. The report will specify numbers and locations of listed species (if observed); observed listed species behavior (especially in relation to project activities); and remedial measures employed to avoid and minimize impacts to listed species and critical habitat. Raw field notes should be available upon request by the CFWO. The Caltrans Project Biologist will review the report and forward it to the CFWO within 15 days of receipt.	Caltrans Biologist	Post construction							
BIO-41	**Wildlife Crossings.** Wildlife connectivity will be addressed consistent with the recommendations in the *Wildlife Crossings Guidance Manual* (Caltrans 2007) to minimize fragmentation and ensure that ecosystem processes are maintained for the benefit of listed species. Caltrans will coordinate with the CFWO during project design and construction to ensure that the following wildlife connectivity measures are implemented by the project: a) Culverts will be designed, constructed, and maintained with a minimum of 6 inches of natural substrate in the bottom. b) Culvert openings will be designed such that wildlife following drainages or the base of slope can find and access openings to move under the road. They	Caltrans Project Engineer	During design and prior to construction							

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	will be flush with the road slope and ground, and will not be perched or extend out into the habitat. c) If rock slope protection is required at culvert openings, it will be filled and maintained with natural substrate. d) Culverts will be straight with no vertical or horizontal bends to allow for line of sight through the culvert and a level surface for movement of wildlife. e) Restoration of temporary impact areas will be designed such that vegetation does not obscure undercrossings (e.g., bridges and/or culverts). Vegetation may be used to funnel wildlife toward undercrossings. f) Culverts will be constructed of concrete and not galvanized steel to avoid amphibian mortality from the absorption of zinc in the galvanized coating. **g)** If feasible, oversized culverts will be used that will not only accommodate the movement of water, but will also improve wildlife connectivity in the project area.									
BIO-42	**Protocol Surveys for Coastal California Gnatcatcher and Least Bell's Vireo.** Protocol surveys will be conducted for coastal California gnatcatcher (CAGN) and least Bell's vireo (LBVI) within 1 year prior to the commencement of vegetation clearing and construction activities for the project.	Caltrans Biologist	Prior to vegetation clearing							
BIO-43	**Reinitiate Section 7 Consultation.** If CAGN and/or LBVI are observed in the project impact footprint, Caltrans will re-initiate consultation with the CFWO to address unanticipated impacts to these species.	Caltrans Biologist	Prior to construction							
BIO-44	**Gnatcatcher and Vireo Impact Minimization Measures.** If CAGN and/or LBVI are observed within 500 feet of the project impact footprint, the following measure will be implemented to avoid and minimize impacts to these species: a) Construction within 500 feet of habitat occupied by CAGN and/or LBVI will occur between September 16 and February 14 to avoid these species' breeding seasons. If project construction is necessary during these species' breeding seasons within 500 feet of habitat occupied by CAGN and/or LBVI, nesting surveys will be conducted to determine and document the presence/ absence of breeding CAGN and/or LBVI. If active nests are identified within 500 feet of the noise-generating construction activities and noise is in excess of 60 A-weighted decibels measured in the equivalent continuous sound level per hour (dBA $L_{eq}(h)$) or ambient noise levels (whichever is higher), noise attenuation measures will be implemented to reduce noise levels to 60 dBA $L_{eq}(h)$ or ambient noise levels at the nest location. Noise monitoring will occur during the breeding season and be reported daily to the CFWO. A CFWO-approved	Caltrans Biologist	During construction							

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	Project Biologist[1] will ensure that avoidance and minimization measures are implemented such that adverse effects to CAGN and/or LBVI do not occur as a result of the adjacent construction activities (e.g., noise and lighting). If the Project Biologist suspects that avoidance and minimization measure are ineffective, and project activities may be adversely affecting these bird species, culpable activities will be suspended within 500 feet of active nesting territories until nesting activity is completed and fledglings are no longer in the area or until effective avoidance and minimization measures can be identified, implemented, and demonstrated to be effective. If measures cannot be identified, implemented and demonstrated to be effective to avoid adverse effects to CAGN and/or LBVI, then project construction will stop until consultation has been completed with the CFWO to address unanticipated impacts to these species.									
BIO-45	**Vegetation Clearing Restrictions.** All vegetation clearing for the project will occur between September 16 and February 14 to avoid the CAGN and LBVI breeding seasons. Clearing may commence earlier in the fall if the Project Biologist demonstrates to the satisfaction of the CFWO that all breeding is complete.	Caltrans Biologist	Prior to construction							
BIO-46	**Coastal Sage Scrub Restoration Maintenance.** If maintenance of a coastal sage scrub restoration area is necessary between February 15 and August 31, a biologist with knowledge of the biology and ecology of CAGN and approved by the CFWO will survey for CAGN within the restoration area, and access paths to it, and other areas susceptible to disturbances by site maintenance. Surveys will consist of three visits separated by 2 weeks, starting March 1 of each maintenance/ monitoring year. Work will be allowed to continue on the site during the survey period. However, if CAGN are found during any of the visits, Caltrans will notify and coordinate with the CFWO to identify measures to avoid and/or minimize effects to CAGN (e.g., nests and an appropriate buffer will be flagged by the biologist and avoided by the maintenance work).	Caltrans Biologist	Post construction							
BIO-47	**Riparian Restoration Maintenance.** If maintenance of a riparian restoration area potentially occupied by LBVI is necessary between March 15 and August 31, a qualified biologist will survey for LBVI within the restoration area, and access paths to it, and other areas susceptible to disturbances by restoration site maintenance. Surveys will consist of three visits separated by 2 weeks starting April 10 of each maintenance/monitoring year. Restoration work will be	Caltrans Biologist	Post construction							

[1] The Project Biologist for this measure will be a trained ornithologist with at least 40 hours in the field observing LBVI and CAGN and documented experience locating and monitoring LBVI and CAGN nests. In order to receive CFWO approval, the biologist's qualifications, contact information, and work schedule on the project must be submitted to the CFWO at least five working days prior to initiating project impacts.

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	allowed to continue on the site during the survey period. However, if LBVI are found during any of the visits, the Caltrans Project Biologist will notify and coordinate with the CFWO to identify measures to avoid and/or minimize effects to the LBVI (e.g., nests and an appropriate buffer will be flagged by the biologist and avoided by the maintenance work).									
BIO-48	**Other Protective Measures.** Measures included in the Biological Opinion to avoid and minimize project impacts to ARTO (e.g., monitoring, restoration of temporary impact areas, temporary construction fencing, employee education, invasive species, lighting, best management practices, dust, material disposal, and wildlife connectivity) will also avoid and minimize project impacts to CAGN and LBVI.	Caltrans Biologist	Prior to, during, and post construction							
Greenhouse Gas Emissions										
Project Feature										
PF-GHG-1	**Best Available Control Technology (BACT).** During design, construction, and operation of the project, the measures that incorporate BACT will used, including but not limited to: • The EPA, NHTSA, and ARB standards related to fuel efficiency and emission reduction will be met or exceeded by the use of energy and fuel-efficient vehicles. • Alternative (non-petroleum based) fuels will be used where feasible. • Construction debris will be recycled to the maximum extent feasible. • Grid-based electricity or on-site renewable electricity generation will be utilized rather than diesel and/or gasoline-powered generators where feasible. • ARB-verified Level 3 emission control devices will be installed on all diesel engines and diesel construction equipment will meet ARB's Tier 4 requirements.	Caltrans Resident Engineer and Project Engineer	During design, construction, and operation of the project	No						
Avoidance, Minimization, and/or Mitigation Measures										
No measures are required.										
Parks and Recreation Facilities										
Project Feature										
PF-PR-1	**San Juan Creek Trail Facility Temporary Closure Plan.** Prior to commencing construction activities, the Construction Contractor will develop a Trail Facility Temporary Closure Plan for addressing the short-term impacts to the San Juan Creek Trail (subject to protection under Section 4(f)). The Temporary Closure Plan will address the affected trail segment within the project limits. Specifically, the Temporary Closure Plan will address:	Caltrans Resident Engineer and Project Engineer	Design and prior to commencing construction activities	No						

Task and Brief Description		Responsible Branch, Staff	Timing / Phase	NSSP Req.	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
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	• Identification of the trail segment that will be closed temporarily during construction; • Public awareness and notification plan, including public notices in the park, and along the affected trail segment regarding the proposed trail detours/closures, contact information for the Resident Engineer and the Construction Contractor, on-site signing, and other activities to inform the public about issues associated with the trail during project construction; • Developing and implementing detours for the temporarily closed trail; • Phasing of the trail closure to allow for effective detours to maintain connectivity of the trail segment around the construction area; • Coordinating the trail closures and detours with the local jurisdiction with authority over the trails; • Criteria for identifying detour routes and facilities; • Information signing for closures and detours; • Requirements for compliance with the Americans with Disabilities Act during construction; • Maintaining signing for closures and detours throughout the closure period and replacing lost or damaged signing; and • Restoring the trail facility at the completion of project construction. Prior to and during construction activities that will require the temporary closure of the San Juan Creek Trail, Caltrans will require the Construction Contractor to comply with and implement the procedures in the Temporary Closure Plan for the affected trail segment.	Caltrans Resident Engineer, Project Engineer, and Construction Contractor	Design and prior to and during construction activities							
PF-PR 2	**Temporary Closures of the San Juan Creek Trail.** Prior to any temporary closures of the trail, Caltrans will obtain approval from the Director of OC Parks, or their representatives, to review the location and need for the trail closure. Detours for each closure will be developed in consultation with OC Parks.	Caltrans Resident Engineer, and Director of OC Parks and Project Engineer	During design and prior to any temporary closures of the trail	No						
PF-PR 3	**Signing for Alternative Trail Routes.** The Resident Engineer will require the project Construction Contractor to develop detour signs, directing trail users to alternative routes. Appropriate directional and informational signage will be provided by the Construction Contractor prior to each closure and far enough away from the closure so that trail users will not have to backtrack to get to the detour route. Informational signage will include the trail difficulty classification for detour routes well in advance for trail users.	Caltrans Resident Engineer, and Construction Contractor and Project Engineer	During design and prior to any temporary closures of the trail	No						

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PF-PR-4	**Contact Information at Trail Detours.** Detour signage shall include the Resident Engineer's contact information and inform trail users to contact the Resident Engineer and/or the Construction Contractor regarding upcoming or active trail closures.	Caltrans Resident Engineer, Project Engineer and Construction Contractor	During design and prior to any temporary closures of the trail	No						
PF-PR-5	**Restoration of Impacted Trail Segments.** The Resident Engineer will require the Construction Contractor to return trail segments closed temporarily during construction to their original, or better, condition after completion of construction, prior to their return to OC Parks. After project construction, the Resident Engineer will document that access to and connectivity of all trails has been restored.	Caltrans Resident Engineer, Project Engineer and Construction Contractor	Design, post construction	No						
PF-PR-6	**Permanent Easements on Property from Parks and Recreation Resources.** All permanent easements on property for the proposed project, including any federally funded improvements, will be conducted by Caltrans in compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act (Uniform Act) of 1970 as amended. The Uniform Act establishes minimum standards for federally funded programs and projects that require the acquisition of real property. The Uniform Act's protections and assistance apply to the acquisition, rehabilitation, or demolition of real property for federal or federally funded projects. The conditions of acquisition and compensation for, or replacement or enhancement of, other park property for any park or recreation resources acquired for the project improvements will be developed by Caltrans in consultation with the officials with jurisdiction of each affected property.	Caltrans Resident Engineer and Project Engineer	Design, prior to construction	No						
PF-PR-7	**Temporary Use of Land from Parks during Construction:** • During final design, Caltrans will evaluate the proposed temporary construction easements (TCEs) in Ronald W. Caspers Wilderness Park and will identify opportunities to further reduce the sizes of the TCEs. The TCEs will be shown on the project plans and specifications and will include notes that the Construction Contractor cannot increase the sizes or change the locations of any of the TCEs without consultation with and approval by Caltrans. • **Access Restrictions at Temporary Construction Easements.** Caltrans will require the Construction Contractor to fence all land used for TCEs. The TCEs will be appropriately signed to restrict access to the area by park and trail patrons. Caltrans will require the Construction Contractor to maintain the fencing throughout the time period during which the TCEs are used and to remove the fencing only after all construction activity in an area is completed, the TCE is no longer needed, and the land used for the TCE is ready to be returned to OC Parks.	Caltrans Resident Engineer Caltrans Resident Engineer, Project Engineer and Construction Contractor	During final design Design, prior to construction	No						

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						Initials	Date		Initials	Date
	• **Signing of the Fenced Temporary Construction Easement.** Caltrans will require the Construction Contractor to provide signing at each TCE explaining why the area is fenced and why access to the TCE is restricted, the anticipated completion date for the use of the land for the TCE, and contact information (for both Caltrans and the Construction Contractor) in order for the public to solicit further information regarding the TCE and the project.	Caltrans Resident Engineer and Construction Contractor	Design, prior to construction							
	• **Return of Land Used for the Temporary Construction Easement to the Property Owners.** Caltrans will require the Construction Contractor to return the land used for each TCE to its original or better condition when construction in an area has been completed and the temporary TCE is no longer needed. The Caltrans Resident Engineer and Division of Environmental Analysis will coordinate the restoration of the affected land with OC Parks.	Caltrans Resident Engineer, Construction Contractor, and Division of Environmental Analysis	Design, prior to construction							
PF-PR-8	**Permanent Easements on Property from Forest Resources.** All permanent easements on property for the proposed project, including any federally funded improvements, will be conducted by Caltrans in compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act (Uniform Act) of 1970 as amended. The Uniform Act establishes minimum standards for federally funded programs and projects that require the acquisition of real property. The Uniform Act's protections and assistance apply to the acquisition, rehabilitation, or demolition of real property for federal or federally funded projects. The conditions of acquisition and compensation for, or replacement or enhancement of, other forest property for any forest or recreation resources acquired for the project improvements will be developed by Caltrans in consultation with the officials with jurisdiction of each affected property.	Caltrans Resident Engineer and Project Engineer	Design, prior to construction	No						
PF-PR-9	**Temporary Use of Land from Forest during Construction:**			No						
	• During final design, Caltrans will evaluate the proposed temporary construction easements (TCEs) in Cleveland National Forest and will identify opportunities to further reduce the sizes of the TCEs. The TCEs will be shown on the project plans and specifications and will include notes that the Construction Contractor cannot increase the sizes or change the locations of any of the TCEs without consultation with and approval by Caltrans.	Caltrans Resident Engineer and Project Engineer	During final design							
	• **Access Restrictions at Temporary Construction Easements.** Caltrans will require the Construction Contractor to fence all land used for TCEs. The TCEs will be appropriately signed to restrict access to the area by Forest patrons. Caltrans will require the Construction Contractor to maintain the fencing	Caltrans Resident Engineer, Project Engineer, and Construction Contractor	Design, prior to construction							

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					Initials	Date		Initials	Date
throughout the time period during which the TCEs are used and to remove the fencing only after all construction activity in an area is completed, the TCE is no longer needed, and the land used for the TCE is ready to be returned to the United States Forest Service (USFS).									
• **Signing of the Fenced Temporary Construction Easement.** Caltrans will require the Construction Contractor to provide signing at each TCE explaining why the area is fenced and why access to the TCE is restricted, the anticipated completion date for the use of the land for the TCE, and contact information (for both Caltrans and the Construction Contractor) in order for the public to solicit further information regarding the TCE and the project.	Caltrans Resident Engineer, Project Engineer, and Construction Contractor	Design, prior to construction							
• **Return of Land Used for the Temporary Construction Easement to the Property Owners.** Caltrans will require the Construction Contractor to return the land used for each TCE to its original or better condition when construction in an area has been completed and the temporary TCE is no longer needed. The Caltrans Resident Engineer and Division of Environmental Analysis will coordinate the restoration of the affected land with the USFS.	Caltrans Resident Engineer, Project Engineer, Construction Contractor, and Division of Environmental Analysis	Design, prior to construction							
Avoidance, Minimization, and/or Mitigation Measures									
No measures are required.									

* denotes mitigation measures under CEQA.

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